Omnitron Systems Technology, Inc.

iConverter®

100FF, OC3FF, OC12FF, 1000FF and xFF Standalone Fiber-to-Fiber Converter User Manual

OVERVIEW:

The *iConverter* standalone fiber-to-fiber media converters provide single-mode (SM) to multimode (MM), dual fiber to single-fiber, wavelength conversion and fiber extension. Fixed-fiber models are available for Ethernet, Fast Ethernet, Gigabit Ethernet and SONET/SDH applications. The Small Form Pluggable (SFP) model is protocol transparent and also supports Fibre Channel.

iConverter 100FF Dual Fiber Modules					
Connector		Fiber Type (Port 1 Port 2)	Distances (Port 1 Port 2)	Tx Wavelength (nm)	Rx Wavelength (nm)
ST/ST	SC/SC				
8620-1-x	8622-1-x	MM	5km	1310	1310
		SM	30km	1310	1310
8620-2-x	8622-2-x	MM	5km	1310	1310
		SM	60km	1310	1310
-	8622-3-x	MM	5km	1310	1310
		SM	120km	1550	1550
ST/SC	SC/SC	*iConverter* 100FF Single-Fiber Modules			
8630-1-x	8634-1-x	MM	5 km	1310	1310
		SM SF	20 km	1310	1550
8631-1-x	8635-1-x	MM	5 km	1310	1310
		SM SF	20 km	1550	1310
8630-2-x	8634-2-x	MM	5 km	1310	1310
		SM SF	40 km	1310	1550
8631-2-x	8635-2-x	MM	5 km	1310	1310
		SM SF	40 km	1550	1310
8632-1-x	8636-1-x	SM	30 km	1310	1310
		SM SF	20 km	1310	1550
8633-1-x	8637-1-x	SM	30 km	1310	1310
		SM	20 km	1550	1310
8632-2-x	8636-2-x	SM SF	30 km	1310	1310
		SM	40 km	1310	1550
8633-2-x	8637-2-x	SM	30 km	1310	1310
		SM SF	40 km	1550	1310

iConverter 1000FF Dual Fiber Modules				
Connector SC/SC	Fiber Type (Port 1 Port 2)	Distances (Port 1 Port 2)	Tx Wavelength (nm)	Rx Wavelength (nm)
8642-0-x	MM	220/550m[1]	850	850
	MM	220/550m[1]	850	850
8642-1-x	MM	220/550m[1]	850	850
	SM	12km	1310	1310
8642-2-x	MM	220/550m[1]	850	850
	SM	34km	1310	1310
8642-3-x	MM	220/550m[1]	850	850
	SM	80km	1550	1550
8643-2-x	SM	12km	1310	1310
	SM	34km	1310	1310
8643-3-x	SM	12km	1310	1310
	SM	80km	1550	1550
ST/SC	*iConverter* 1000FF Single-Fiber Modules			
8650-1-x	MM	220/550m[1]	850	850
	SM SF	20 km	1310	1550
8651-1-x	MM	220/550m[1]	850	850
	SM SF	20 km	1550	1310
8652-1-x	SM	12 km	1310	1310
	SM SF	20 km	1310	1550
8653-1-x	SM	12 km	1310	1310
	SM SF	20 km	1550	1310
8650-2-x	MM	220/550m[1]	850	850
	SM SF	40 km	1310	1550
8651-2-x	MM	220/550m[1]	850	850
	SM SF	40 km	1550	1310
8652-2-x	SM	12 km	1310	1310
	SM SF	40 km	1310	1550
8653-2-x	SM	12 km	1310	1310
	SM SF	40 km	1550	1310

[1]62.5/125µm, 100/140µm multimode fiber up to 220m. 50/125µm multimode fiber up to 550m. Refer to the fiber cable manufacturer for multimode distance specifications.

iConverter OC3FF Dual Fiber Modules					
Connector		Fiber Type (Port 1 Port 2)	Distances (Port 1 Port 2)	Tx Wavelength (nm)	Rx Wavelength (nm)
ST/ST	SC/SC				
8660-1-x	8661-1-x	MM	5km	1310	1310
		SM	30km	1310	1310
8660-2-x	8661-2-x	MM	5km	1310	1310
		SM	60km	1310	1310
	8661-3-x	MM	5km	1310	1310
		SM	120km	1550	1550
ST/SC	SC/SC	*iConverter* OC3FF Single-Fiber Modules			
8670-1-x	8674-1-x	MM	5 km	1310	1310
		SM SF	20 km	1310	1550
8671-1-x	8675-1-x	MM	5 km	1310	1310
		SM SF	20 km	1550	1310
8670-2-x	8674-2-x	MM	5 km	1310	1310
		SM SF	40 km	1310	1550
8671-2-x	8675-2-x	MM	5 km	1310	1310
		SM SF	40 km	1550	1310
8672-1-x	8676-1-x	SM	30 km	1310	1310
		SM SF	20 km	1310	1550
8673-1-x	8677-1-x	SM	30 km	1310	1310
		SM SF	20 km	1550	1310
8672-2-x	8676-2-x	SM	30 km	1310	1310
		SM SF	40 km	1310	1550
8673-2-x	8677-2-x	SM	30 km	1310	1310
		SM SF	40 km	1550	1310

iConverter OC12FF Dual Fiber Modules				
Connector SC/SC	Fiber Type (Port 1 Port 2)	Distances (Port 1 Port 2)	Tx Wavelength (nm)	Rx Wavelength (nm)
8681-1-x	MM	220/550m[1]	1310	1310
	SM	12km	1310	1310
8681-2-x	MM	220/550m1	1310	1310
	SM	34km	1310	1310
8681-3-x	MM	220/550m[1]	1310	1310
	SM	80km	1550	1550
SC/SC	*iConverter* OC12FF Single-Fiber Modules			
8690-1-x	MM	220/550m[1]	1310	1310
	SM SF	20 km	1310	1550
8691-1-x	MM	220/550m[1]	1310	1310
	SM SF	20 km	1550	1310
8692-1-x	SM	12 km	1310	1310
	SM SF	20 km	1310	1550
8693-1-x	SM	12 km	1310	1310
	SM SF	20 km	1550	1310

[1]62.5/125µm, 100/140µm multimode fiber up to 220m. 50/125µm multimode fiber up to 550m. Refer to the fiber cable manufacturer for multimode distance specifications.

iConverter xFF Dual Fiber Modules				
Connector SFP	Fiber Type (Port 1 Port 2)	Distances (Port 1 Port 2)	Tx Wavelength (nm)	Rx Wavelength (nm)
8699-0-x	-	-	-	-
	-	-	-	-
Refer to the SFP data sheet for supported transceivers.				

LINK MODES:

The *iConverter* standalone fiber-to-fiber media converters support two different linking modes.

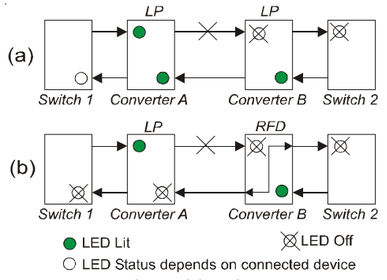

Fig. 1 Link Modes

In Link Propagate (LP) mode (sometimes referred to as Link Loss Carry Forward), a port transmits a Link signal only when receiving a Link on the other front-plane port, and a loss of a received Link at one port causes the other front-plane port to stop transmitting its link signal. For example, P1 transmits a Link only when receiving a Link at P2 [Fig 1(a)].

In Remote Fault Detection (RFD) mode, a port transmits a Link signal only when both itself and the other port are receiving Link signals. A loss of a received Link signal at a port is Looped-back and the port stops transmitting a Link signal. The same loss of Link is propagated to the other port which also stops transmitting the Link signal. For example, the loss of Link into P2 causes both P1 and P2 ports to stop transmission of the Link signal [Fig 1(b)].

Note: Connecting two adjacent converters which are both set to RFD is not permitted and will cause a "deadly embrace" lockup.

FRONT PANEL DIP-SWITCH SETTINGS:

Left / Down **Right / Up**

Link Segment = LS [■] LP = Link Propagate
Normal = Norm [ ] RFD = Remote Fault Detection

Fig. 2 Front Panel Dip-Switches

Link Segment/Link Propagation "LS/LP" Dip-Switch: This DIP-Switch has no effect. The LS function of this DIP-Switch has been disabled to enhance compatibility with third-party fiber optic devices. *iConverter* fiber-to-fiber media converters normally operate in LP mode.

Remote Fault Detection Switch "RFD" Dip-Switch: When in the Remote Fault Detection "RFD" position, the Remote Fault Detection mode is enabled and LP mode is disabled. When in the Normal "Norm" position (factory setting), Remote Fault Detection is disabled and LP mode is enabled.

LED INDICATORS:

LED	Color	Description	
Pwr:	Yellow	On--Power on	
Lk/Rx (P1):	Green	On--Link	Off--No Link
Lk/Rx (P2):	Green	On--Link	Off--No Link

INSTALL STANDALONE MODULE AND CONNECT CABLES

1. For wall-mounting, attach the converter to a wall, backboard or other flat surface. For tabletop installations, place the unit on a flat surface. Attach the rubber feet to the bottom of the converter to prevent the unit from sliding. Make sure the unit is placed in a safe, dry and secure location.

   To power the unit using the AC/DC adapter, connect the AC/DC adapter to an AC outlet. Then connect the barrel plug at the end of the wire on the AC/DC adapter to the 2.5mm DC barrel connector (center-positive) on the unit. Confirm that the unit has powered up properly by checking the power status LED located on the front of the unit.

   To power the unit using a DC power source, prepare a power cable using a two conductor insulated wire (not supplied) with a 14 AWG gauge minimum. Cut the power cable to the length required. Strip approximately 3/8 of an inch of insulation from the power cable wires. Connect the power cables to the unit by fastening the stripped ends to the DC power connector.

   Connect the power wires to the DC power source. The Power LED should indicate the presence of power.

   WARNING: Note the wire colors used in making the positive and negative connections. Use the same color assignment for the connection at the DC power source.

   NOTE: If mounting with a safety ground attachment, use the safety ground screw at the rear of the unit.

2. When using an SFP model (8699-0), insert the SFP Fiber transceiver into the SFP receptacle on the module. **Note: The release latch of the SFP Fiber transceiver must be in the closed position before insertion. The tranceivers installed must have matching speeds to operate.**
3. Attach an appropriate multimode or single-mode fiber cable to each fiber connector. The transmit cable (Tx) must attach to the receive side on the other device; the receive cable (Rx) must attach to the transmit.
4. When using single-fiber (SF) models, the Tx wavelength on one end must match the Rx wavelength on the other and the converters must be used in matched pairs (example: model 8670-1 must be matched with model 8671-1).

FIBER-TO-FIBER SPECIFICATIONS:

Model Type	100FF	1000FF	OC3FF	OC12FF	xFF
Protocols	100BASE-FX, 100BASE-BX, 100BASE-LX	1000BASE-SX, 1000BASE-LX, 1000BASE-ZX, 1000BASE-BX	OC-3	OC-12	100BASE-FX, 1000BASE-X, OC-3, OC-12, OC-48, Fibre Channel 1x/2x/4x
Maximum Data Rate	155Mbps	1.25Gbps	155Mbps	1.25Gbps	4.25Gbps
Fiber Connectors	SC, ST, Single-Fiber SC	SC, Single-Fiber SC	SC, ST, Single-Fiber SC	SC, Single-Fiber SC	SFP
Controls	Link Propagate, Remote Fault Detection				
LED Displays	Power, Fiber Optic Link (2)				
Dimensions	W:0.85" x D:4.5" x H:2.8"				
Weight	8 oz.				
Compliance	UL, CE, FCC Class A, NEBS Level 3				
Power Requirement (typical)	5-32VDC 0.3A @ 9VDC (1.0A max)				
Temperature	Standard: 0 to 50° C Wide: -40 to 60° C Storage: -40 to 80° C				
Humidity	5 to 95% (non-condensing)				
Altitude	-100m to 4000m				
MTBF (hrs)	1,300,000				

Warning

The operating description in this Instruction Manual is for use by qualified personnel only. To avoid electrical shock, do not perform any servicing of this unit other than that contained in the operating instructions, unless you are qualified and certified to do so by Omnitron Systems Technology, Inc.

Warranty

This product is warranted to the original purchaser against defects in material and workmanship for a period of 2 YEARS from the date of shipment. A LIFETIME limited warranty may be obtained by the original purchaser by REGISTERING this product with Omnitron within 90 days from the date of shipment. To register, complete and mail or fax the enclosed Registration Card to the indicated address. You may also register your product on the internet at www.omnitron-systems.com/Register. During the warranty period, Omnitron will, at its option, repair or replace a product which is proven to be defective.

For warranty service, the product must be sent to an Omnitron designated facility, at Buyer's expense. Omnitron will pay the shipping charge to return the product to Buyer's designated US address (within the 48 contiguous states and the District of Columbia) using Omnitron's standard shipping method.

Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate use and/or maintenance of the equipment by Buyer, Buyer-supplied equipment, Buyer-supplied interfacing, unauthorized modifications or tampering with equipment (including repairs of equipment by personnel not specifically authorized and certified by Omnitron, or misuse, or operating outside the environmental specification of the product (including but not limited to voltage, ambient temperature, radiation, unusual dust, etc.), or improper site preparation or maintenance.

No other warranty is expressed or implied. Omnitron specifically disclaims the implied warranties of merchantability and fitness for any particular purpose.

Exclusive Remedies

The remedies provided herein are the Buyer's sole and exclusive remedies. Omnitron shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any legal theory.

Technical Support:

For help with this product, contact our Technical Support:

Phone: (949) 250-6510
Fax: (949) 250-6514
Address: Omnitron Systems Technology, Inc.
140 Technology Dr., #500
Irvine, CA 92618 USA
E-mail: support@omnitron-systems.com
URL: www.omnitron-systems.com

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